

**Notice of Allowability**

Application No.

10/726,121

Applicant(s)

ASSMANN, STEFAN

Examiner

Parikha S. Mehta

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed 9 August 2007.
2. ☒ The allowed claim(s) is/are 1-6 and 9-12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|  | 9. <input type="checkbox"/> Other _____   |

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### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven H. Noll on 17 August 2007.

The application has been amended as follows:

Claim 1 now reads:

A method for automatically determining a speed of a flowing medium in a magnetic resonance tomography flow measurement, comprising the steps of:

acquiring an overview magnetic resonance image of a selected area of a living subject;

displaying said overview image on a screen;

performing a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

from said scout flow measurement, automatically determining a peak speed of said flowing medium in said tissue area;

performing an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

generating and displaying on said screen a speed-resolved image including said tissue area using said peak ~~spread~~ speed to set a grey scale range in said speed-resolved image, obtained by said optimized flow measurement in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

Claim 11 now reads:

A magnetic resonance imaging device comprising:

a magnetic resonance scanner adapted to receive a subject therein;

a control computer connected to said magnetic resonance scanner;

a display screen connected to said control computer; and

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said control computer being programmed to operate said magnetic resonance scanner to acquire an overview magnetic resonance of a selected area of a living subject, and to display said overview image on a screen, and to perform a scout flow measurement by causing said magnetic resonance scanner to acquire a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium, and to automatically determine from said scout flow measurement, a peak speed of said flowing medium in said tissue area, and to perform an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed, and to generate and display a speed-resolved image including said tissue area, using said peak ~~spread~~ speed to set a grey scale range in said speed-resolved image obtained by said optimized flow measurement on a screen in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed-resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

Claim 12 now reads:

A computer-readable medium encoded with a data structure, said computer-readable medium being loadable into a control computer of a magnetic resonance imaging apparatus, said magnetic resonance imaging apparatus including a magnetic resonance scanner operated by said control computer, and a display screen connected to said control computer, and said data structure causing said control computer to:

acquire an overview magnetic resonance image of a selected area of a living subject;

display said overview image on a screen;

perform a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

from said scout flow measurement, determine a peak speed of said flowing medium in said tissue area;

perform an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

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generate a display on said screen of a speed-resolved image including said tissue area, using said peak speed to set a grey scale range in said speed-resolved image, wherein the speed-resolved image is obtained by said optimized flow measurement, and wherein the display is generated in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed-resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

2. The following is an examiner's statement of reasons for allowance: The closest prior art of record fails to teach or fairly suggest adjusting the grey scale range in a flow image according to the automatically-measured peak speed of flow within the image.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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